STATE ROUTE

Transportation Concept Report

Office of System Planning · District 6 · April 2005

Caltrans

Caltrans District 6
Office of System Planning

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Front cover photo was taken in Caltrans' District 6 along various locations of SR 178 in Kern County.

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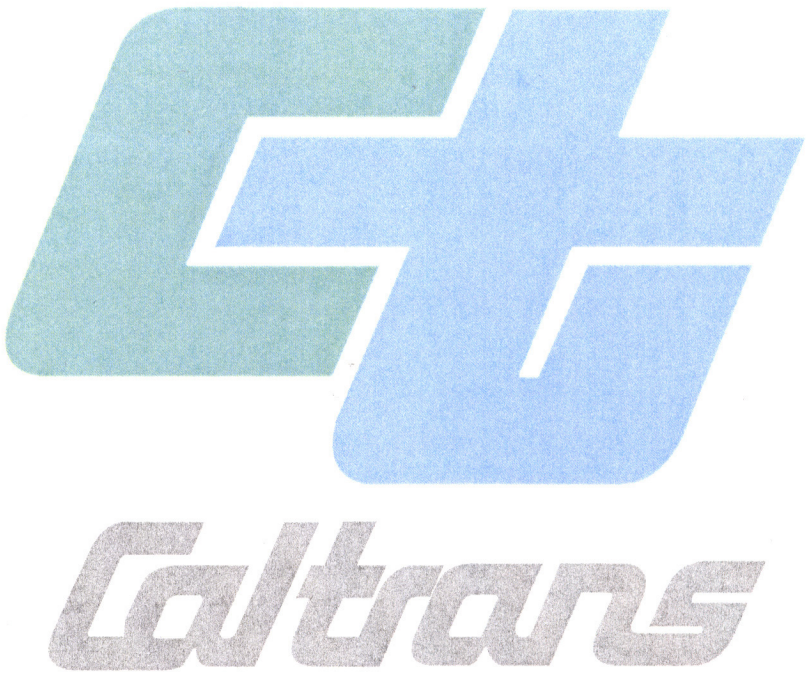
District 6



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3/2/05

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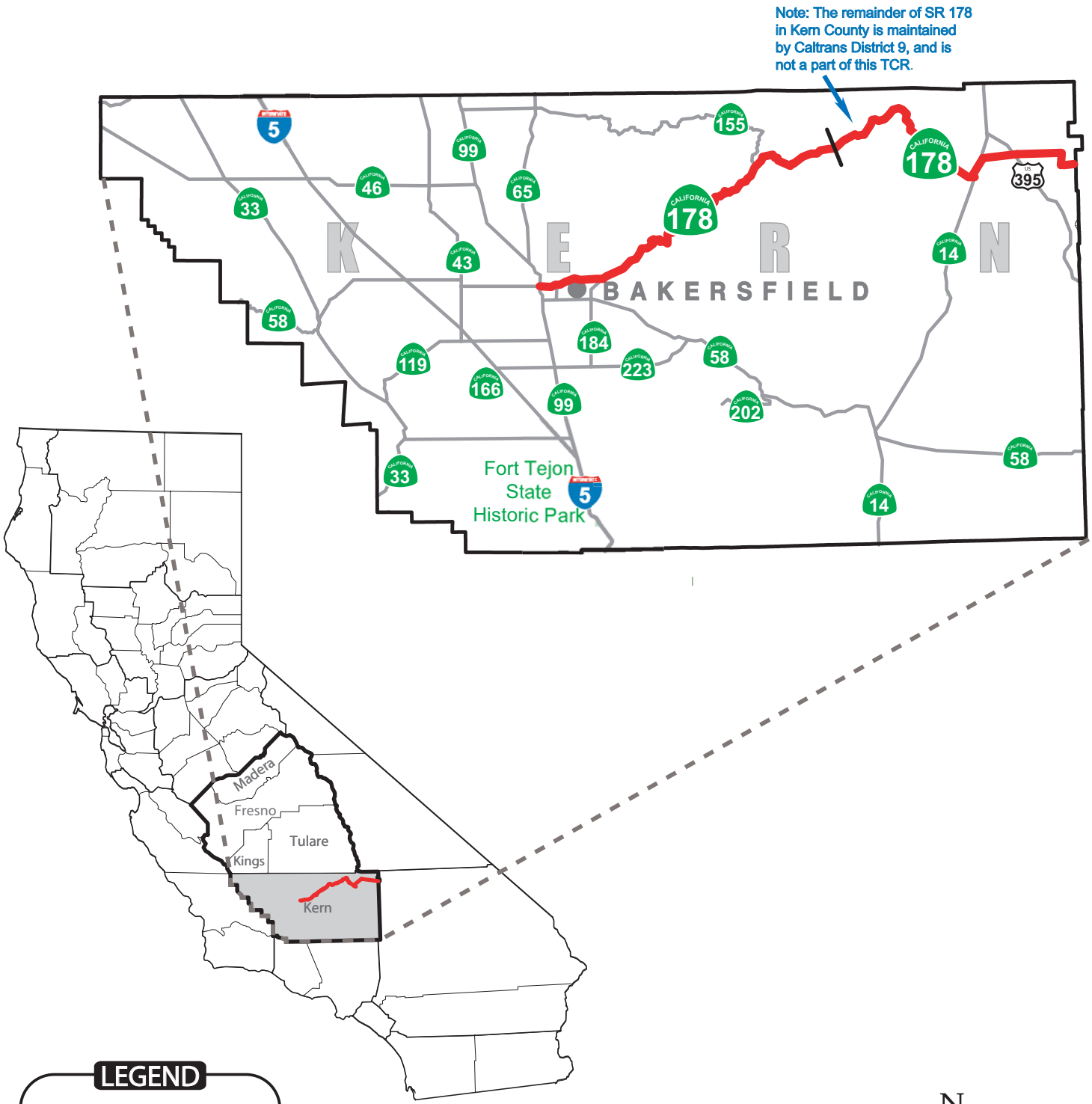
STATE ROUTE 178
TRANSPORTATION CONCEPT REPORT

LOCATION MAP



Transportation Concept Report
State Route 178
April 2005

I. INTRODUCTION

The Transportation Concept Report (TCR) is a long-range system-planning document that establishes a planning concept for the corridor through the year 2030. The TCR provides route data and information, as well as current and projected (years 2005, 2015, and 2030 respectively) operating characteristics.

Considering reasonable financial and physical constraints, the TCR defines the appropriate Concept Level of Service (Concept LOS) and facility type(s) for each route. It also broadly identifies the nature and extent of improvements needed to attain the Concept LOS. Capacity-enhancing improvements, such as lane additions, are the primary focus for LOS attainment.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, or whichever LOS is feasible to attain. For the purpose of this document, however, the Concept LOS is a "target" LOS determined by the importance of the route and environmental factors. A deficiency (need for improvement) is triggered when the actual LOS falls below the Concept LOS.

The TCR also identifies transit, and the deployment of Intelligent Transportation Systems (ITS) as integral to route corridor development.

However, operational improvements, such as intersection modifications, are discussed as interim measures. The TCR also identifies transit, notably the High Speed Passenger Rail System, and the deployment of Intelligent Transportation Systems (ITS) as integral to route corridor development. The Ultimate Transportation Corridor (UTC), as identified in this TCR, ensures that adequate right-of-way (ROW) is preserved for ultimate facility projects beyond 2030.

However, the UTC does not consider funding as a constraint. Caltrans District 6 System Planning staff should be consulted for the interim ROW (prior to ultimate construction) for a specific location along the corridor.

This document identifies the initial and conceptual planning phase that leads to subsequent programming and the project development process. Consequently, the specific nature of proposed improvements such as roadway width, number of lanes, and access control might change in later project development stages. Final determinations are normally made during the project report and design phases.

Therefore, a TCR is a "living document," subject to amendments as conditions change and projects are completed. System Planning staff will update the TCR on a three-to-five year cycle or as needed. The TCR for State Route (SR) 178 was prepared and completed by District 6 Office of System Planning staff in cooperation with local and regional agencies and other Caltrans functional units.

As such, the TCR will serve as a guide in cooperative planning and implementation of transportation and land use decisions.

II. ROUTE DESCRIPTION AND PURPOSE

Begins: At Route 99/58/178 Junction in Bakersfield in Kern County
Ends: At the Nevada State line

Length: 208-mile highway in Kern, San Bernardino, and Inyo Counties

The route is located in Caltrans' Districts 6, 8, and 9, which include Kern, San Bernardino, and Inyo Counties. This Transportation Concept Report covers the 58 miles of SR 178, from the SR 99/58/178 junction in Bakersfield to Kelso Valley Road (near Weldon) in Kern County. The segment from Weldon to the San Bernardino County line is not covered in this TCR since it is maintained by District 9 Maintenance and Operations. At the beginning of the document (Location Map, page "i") is a map showing the location of Route 178 covered by this TCR.

Land Use: The east-west route begins in the urban area of Bakersfield. This portion of the route includes commercial and residential development in a rapidly growing area. In the rural area, the route primarily serves recreational traffic to Lake Isabella and other points in the Kern River Canyon. Small communities are situated in the mountainous regions.

Terrain: Generally on flat terrain in and near the urban area, with mountainous terrain from the mouth of the Kern River Canyon and into the Sequoia National Forest in Kern County.

A. Modal Alternatives

Transit Services: Both fixed-route and dial-a-ride buses serve the local traveler in Kern County. Common transit carriers include Greyhound Bus Lines, Orange Belt Stages, the Airport Bus of Bakersfield, and the Amtrak bus. Golden Empire Transit is the local transit carrier within Bakersfield.

The Golden Empire Transit (GET) operates fixed routes within Bakersfield, which includes travel on Route 178.

Kern Regional Transit operates along the "Bakersfield to Lake Isabella" corridor. Kern River Valley Fixed Route and Dial-a-Ride serves the communities of Lake Isabella, Onyx, and Kernville.

For a segment by segment list of specific transit providers, please see the Transit Services chart in the Appendix, located at the end of this TCR.

Amtrak Rail: Currently, there are six Amtrak San Joaquin passenger rail trains that pass through District 6 on a daily basis. The San Joaquin Route Amtrak train has station connections in Bakersfield, Wasco, Corcoran, Hanford, Fresno, and Madera. Amtrak Thruway bus service is available in Bakersfield and Hanford. The Thruway bus service connects with the train in order for the passenger to reach their final destination on a non-train route.

High Speed Rail: The California High Speed Rail Authority has developed the California High Speed Rail Business Plan to build a high-speed rail line generally parallel to and west of Route 99, from Los Angeles to San Francisco. The plan describes a 700-mile long high-speed train system capable of speeds of 200 miles per hour.

The system would serve the major metropolitan centers of California. In 2020, it is projected to carry 32 million intercity passengers annually, transport another 10 million commuters, and would generate nearly $900 million in revenue.

Bicycle Routes/Pedestrian Access:

SR 178 contains highway segments that are both open and closed to bicycle and pedestrian travel. For the most part, all non-freeway segments of this highway are open for bicycling and walking. However, while many segments are open they often lack adequate shoulders, such as the narrow Kern River Canyon. Bicycle traffic is therefore not recommended on these narrow segments. Future plans call for upgrading numerous segments of this highway.

Please refer to the "Bicycle Routes/Pedestrian Access" section of the Appendix, located at the end of this report for more detailed information.

B. Intelligent Transportation Systems

Call Boxes located along SR 178 are one aspect of the ITS network provided to motorists in Kern County.

Numerous applications of Intelligent Transportation Systems exist or are proposed throughout the extent of State Route 178. Operational and safety efficiency will be enhanced by the deployment of Intelligent Transportation System technology. Current ITS applications along the facility include weather stations, changeable message signs, and highway advisory radio.

The Caltrans Central Valley Transportation Management Center (TMC) monitors specific traffic locations from its headquarters at the District Office in Fresno. For more specific segment by segment information, see the ITS chart in the Appendix.

C. Highway Facts

* In 1919, Route 178, formerly known as Route 57, was added to the State Highway System. The section from Route 99 to the San Bernardino County line was added to the California Freeway and Expressway System in 1959.

* On April 27, 1960, Route 178 was adopted on a new alignment (currently unconstructed) between west of Morning Drive to SR 155 at Lake Isabella. The adopted alignment lies northerly of existing Route 178 and generally follows Rancheria Road until it reaches the Lake Isabella area.

* In District 6, Route 178 is functionally classified as a high volume Principal Arterial within Bakersfield and a low volume Minor Arterial for the remainder of its length. Route 178 serves as a significant route for urban commuters in Bakersfield.

* Route 178 is important as a Trans-Sierra route providing access to Lake Isabella and the Sequoia National Park. Recreational travelers use the route mainly on weekends and holidays. The Annual Average Daily Traffic (AADT) ranges from 3,800 to 59,000, with trucks constituting up to 8 percent of the AADT.

* A proposed realignment for the Route 178 Freeway is part of the Metro Bakersfield 2010 General Plan Circulation Element.

* A portion of Route 178 between Rancheria Road and Kelso Valley Road near Weldon (Segments 7-15) is included as a part of the Interregional Road System in District 6.

* Route 178 is known as the Kern River Canyon Road from the mouth of the Kern Canyon to Route 155.

* Tractor-semi-trailer combinations are limited to the National Network (Federal- Surface Transportation Assistance Act or STAA Network) and its Terminal Access (State-STAA Network) routes by a combination of length, kingpin to rear axle limit (KPRA) and the number of axles. Road signs have been posted identifying Terminal Access routes, KPRA Advisory routes, and routes with special restrictions. Route 178 has the following designations within District 6:

  - This route is designated as a State Highway Terminal Access Route for larger trucks under the STAA from the SR 99/58/178 interchange (PM 0.0) to near the mouth of Kern Canyon (PM 13.7).

  - From the mouth of the Kern Canyon (PM 13.7) to Kern River Canyon Road, Route 178 (PM 30.0) is designated as an KPRA Advisory route, which restricts KPRA lengths on the route.

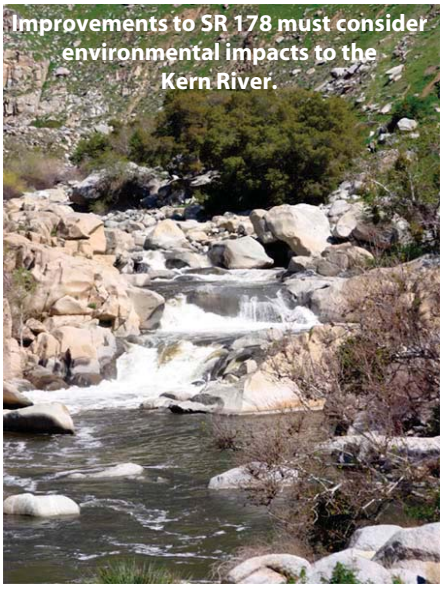
  - A California Legal designation (40–foot KPRA) exists from 20 miles east of the Route 184 junction (PM 30.0) to Chimney Creek Road (PM 70.7).

D. General Environmental Considerations

Specific sensitive biological species include, but are not limited to, the following flora and fauna:

FLORA-wetland areas, Bakersfield cactus, California Jewel Flower, Kern Mallow, Alkali Mariposa lily plants, San Joaquin Woolythreads; FAUNA-San Joaquin kit fox, giant kangaroo rat, Tipton kangaroo rat, blunt-nosed leopard lizard, burrowing owl, Kern Canyon salamander, and migratory birds.

In addition, there are historical and archeological sites that will need to be investigated. Geologic considerations need to identified in the mountainous area of the route. Environmental considerations to improvements include the Kern River, several canals, and archeological sites that exist along the route.


Improvements to SR 178 must consider environmental impacts to the Kern River.

III. Segment Map

On the following page is an 11"x17" foldout TCR Segment Map for Route 178. This map shows the 15 segments of SR 178 in Kern County.

Following the Segment Map is Section IV, which provides an overview of Route 178 geometrics (including segment detail maps), land use and environmental considerations. The overview is split into three segment groups. See the four-page Summary Chart in Section VI. for additional information in table form.

See the following page for the 11"x17" TCR Segment Map.

STATE ROUTE 178
TRANSPORTATION CONCEPT REPORT
SEGMENT MAP

Note: The remainder of SR 178 in Kern County is maintained by Caltrans District 9, and is not a part of this TCR.

KERN COUNTY

1. **Segment 1:** SR 178 PM 0.0 / 1.0
   N Jct SR 99/58/178 Sep / B St
2. **Segment 2:** SR 178 PM 1.0 / 1.7
   B St / M St
3. **Segment 3:** SR 178 PM 1.7 / R4.1
   M St / Haley St OC
4. **Segment 4:** SR 178 PM R4.1 / R6.2
   Haley St OC / 0.6 Mi E of Oswell St OC
5. **Segment 5:** SR 178 PM R6.2 / T9.6
   0.6 Mi E of Oswell St OC / SR 184
6. **Segment 6:** SR 178 PM T9.6 / R11.0
   SR 184 / Rancheria Rd
7. **Segment 7:** SR 178 PM R11.0 / 13.7
   Rancheria Rd / Mouth of Kern River Canyon
8. **Segment 8:** SR 178 PM 13.7 / 24.0
   Mouth of Kern River Canyon / 2.6 Mi W of Democrat Rd
9. **Segment 9:** SR 178 PM 24.0 / R30.6
   2.6 Mi W of Democrat Rd / Sequoia Natl. Forest boundary
10. **Segment 10:** SR 178 PM R30.6 / R31.7
    Sequoia Natl. Forest boundary / 3.4 Mi E of China Garden Rd
11. **Segment 11:** SR 178 PM R31.7 / R41.2
    3.4 Mi E of China Garden Rd / 0.4 Mi W of Bodfish Rd
12. **Segment 12:** SR 178 PM R41.2 / R43.9
    0.4 Mi W of Bodfish Rd / 1.0 Mi E of SR 155
13. **Segment 13:** SR 178 PM R43.9 / 55.7
    1.0 Mi E of SR 155 / Sierra Wy
14. **Segment 14:** SR 178 PM 55.7 / 56.7
    Sierra Wy / 1.0 Mi E of Sierra Wy
15. **Segment 15:** SR 178 PM 56.7 / 57.1
    1.0 Mi E of Sierra Wy / Kelso Valley Rd

LEGEND

Indicates segments of Route 178.

1 Corresponds with the symbols below to provide segment information.

Jct = Junction **Mi** = Mile
PM = Post Mile **Sep** = Separation
SR = State Route

IV. Geometrics, Land Use, and Environmental Considerations

Segments 1-5: North JCT Route 99/58 SEP to Route 184 in Bakersfield

Begins: At Route 99/58/178 SEP
Ends: At Route 184

Land Use: Bakersfield's downtown area includes a mix of commercial and residential development.

Facility: Route 178 consists of a 4-lane conventional highway from Route 99 to B Street. The route consists of two one-way couplets from B Street to M Street, a 6-lane conventional highway.

Each of the one-way roads (23rd and 24th Streets) constituting the one-way couplet has three lanes. The facility is a 6-lane freeway for about 4.5 miles between M Street and approximately 0.6 miles east of Oswell Street, and a 2-lane conventional highway to Route 184.

Interchanges and other intersections with State highways:

* Interchange connections with State Route 99 (west to east): direct link with the north junction of Route 58 (locally known as Rosedale Highway) for westbound traffic.

* Commuters use the Route 99 /58/178 West interchange and Route 99 as the linkage to Route 58 East, located south of the interchange. The linkage issue has been a critical unresolved issue for regional traffic through Bakersfield.

* An interchange connection is proposed at Oak Street (PM 0.0/1.1, KP0.0/1.8).

* Route 178 has an interchange with the North Junction of Route 204 (PM R2.0, KP3.2).

* An interchange connection is at Oswell Street (PM 5.6, KP 9.0).

* An interchange proposed at Fairfax Road (PM R6.1/R7.5, KP R9.8/12.1) is under design and expected to be constructed by 2008.

* Route 178 intersects city streets through Bakersfield. A majority of the intersected streets are signalized.

* An interchange connection is proposed at Morning Drive (proposed realigned Route 184).

* Route 178 intersects with Route 184 (PM T9.61, KP T15.4).

SR 178 is a main thoroughfare in Bakersfield. This photo shows the one-way westbound couplet at M Street.

Environmental/Historical Resources: Environmental concerns would range from the impacts of ROW acquisition, noise, and landscape removal in the urban areas. Route 178 traverses a primarily commercial area bordered by residential neighborhoods that contain many potentially historic homes and buildings. The San Joaquin kit fox is known to den in the Route 99/58/178 Interchange area. Context sensitive solutions must be considered in all improvements to the route.

Segments 6-10: Route 184 to 3.4 Mi (5.44 KM) east of the China Garden Road

Begins: At Route 184
Ends: At 3.4 Mi (5.44 KM) east of the China Garden Road

Land Use: Segments 6-10 begins with an urban segment with sprawling residential development toward the remaining rural segments.

Route 178 traverses the mouth of the Kern River Canyon to the Sequoia National Park.

Facility: The highway is a 2-lane conventional highway (PM 9.6) to 2.6 miles west of Democrat Road within the Sequoia National Forest. The Route travels through a geo-logically unstable area.

Within Segments 8-10, the Kern River Canyon Road includes rock and boulder formations along the route with limited shoulders. Segments 9 and 10 are comprised of both a 2-lane conventional highway and a 4-lane expressway.

Through recent discussions with Bakersfield there is serious consideration of relocating a portion of Route 178 to the adopted alignment.

SR 178 is comprised of both a 2-lane conventional highway and a 4-lane expressway in the Kern River Canyon.

The proposal consists of relocating that portion between west of proposed Vineland Avenue to east of the intersection of Rancheria Road, utilizing an interim connection back to existing Route 178 near the mouth of the Kern River Canyon.

Interchanges and other intersections with State highways:

Route 178 intersects with Route 184 (PM T9.61, KP T15.4).

Route 178 intersects with Rancheria Road, Democrat Springs Road, and China Garden Road.

Environmental/Historical Resources: From east of Oswell Street to the mouth of the Kern Canyon the primary environmental issue is endangered species, primarily the kit fox and the Bakersfield cactus.

Issues include archaeological sites, water, and sensitive resources near the Kern River. Geological issues are a primary concern in and near the Sequoia National Forest Boundary.

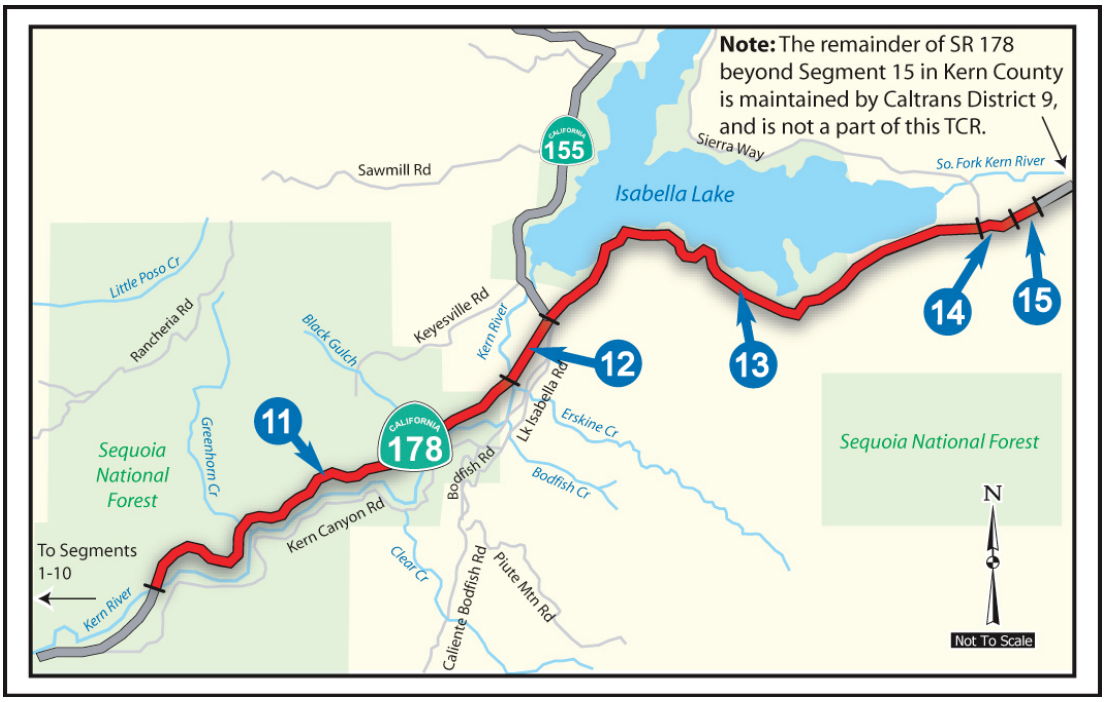
ROW acquisitions and preservation are important route adoption issues for the new alignment. ROW acquisition may be cost prohibitive and environ-mentally significant. The Edison powerhouse complex near Sidehill Viaduct is eligible for the National Historic Register.

Segments 11-15: 3.4 miles (5.44 KM) east of the China Garden Road to Kelso Valley Road

Begins: At 3.4 miles (5.44 KM) east of the China Garden Road
Ends: At Kelso Valley Road.

Land Use: Segments 11-15 traverse through recreational areas associated with the Lake Isabella Reservoir, as well as the communities of Bodfish, Lake Isabella, Mountain Mesa, and South Lake. A major point of interest is the Sequoia National Forest.

Any future improvements to this section of SR 178 will consider environmental issues related to the Lake Isabella recreation area and reservoir.



Facility: The route begins with a 4-lane expressway in Segment 11 and a 4-lane freeway in Segment 12. Segments 13-15 consist of a 2-lane conventional highway to Kelso Valley Road.

Interchanges and other intersections with State highways:

Interchange connection is at Bodfish Road.
Interchange connection is at Route 155.
Intersects with Sierra Way and Kelso Road.

Environmental/Historical Resources: Issues include several recreation areas associated with the Lake Isabella reservoir and several archeological sites. Riparian concerns consist of the Kern River, canals and creeks. Context sensitive solutions must be considered for the comm-unities of Mountain Mesa and South Lake. Right-of-way acquisition for future projects may be cost prohibitive and environmentally
significant.

V. Concept Rationale

Route Concept LOS:

Rural: LOS C as assigned to the rural portions of Route 178 since it is a major recreational route providing access to Lake Isabella and the Sequoia National Forest, while being cost effective for adopted alignment improvements in rolling to mountainous terrain.

Urban: LOS D was assigned to the urban areas due to the heavy traffic volumes from the interchange at SR 99/58/178, the geometric configurations of the couplets in the urban area, and the urbanized nature of these segments. LOS D signifies the greater LOS flexibility when capacity improvements are needed, particularly in Segments 1 and 2.

Concept Facility: The Concept Facility for SR 178 varies according to the facility type; the following list shows the facility for the year 2030, beginning with the segment at the Route 99/58/178 Interchange and proceeding eastward.

6-lane conventional highway (Segments 1 and 2): There will only be improvements for a 6-lane conventional highway in this section. The Centennial Freeway, a local east-west freeway, will cross Route 99 and connect to the existing urban freeway portion of Route 178, near Haley Street. The Centennial Freeway will provide local freeway circulation continuity.

6-lane freeway (Segments 3-6): While Segments 3 and 4 are existing freeway portions, Segments 5 and 6 are part of a new route adoption on which the freeway will be on new alignment. This will serve the Bakersfield area as it expands eastward.

2-lane conventional highway (improved)-(Segments 7 and 8): These are segments primarily within the Kern River Canyon. Only operational and safety improvements and safety are expected. The expressway on a new alignment around the Kern River Canyon is not expected to be built during the TCR period. A portion of Segment 7 may be expanded to a 4-lane freeway on an adopted 6-lane ROW (see discussion in the previous Section IV - Segments 6-10).

2 to 4-lane expressway/freeway (Segments 9-12): No other capacity improvements are expected on this stretch of highway.

2-lane conventional highway (improved)-(Segments 13-15): Only operational and safety improvements are expected on this stretch of highway.

The Ultimate Transportation Corridor (UTC-beyond 2030) in the Bakersfield metropolitan area (Segments 1-6) is essentially a 6 to 8-lane freeway, with the exception of the conventional highway of Segments 1 and 2. On the new alignment north of the Kern River Canyon to Route155, the UTC will be a 4-lane expressway or freeway (Segments 7-12). In the Lake Isabella area, only a 2-lane conventional highway with operational and safety improvements is projected for the UTC (Segments 13-15).

VI. State Route 178 Transportation Concept Report Summary Chart

The 4-page Summary Chart following this section indicates that SR 178 is divided into 15 distinct segments that provide descriptive and technical information, both current and forecast, for the State highway. It also has a linear geographic diagram that illustrates the major State and local highway facilities, along with key natural features and City/County boundaries, current highway geometrics, i.e., conventional highway, expressway, and freeway. A "Chart Explanation" bar defines what is shown on the Chart with the exception of self-explanatory technical information. The Summary Chart also delineates functional classification, various highway designations, environmental information, and General Plan information.

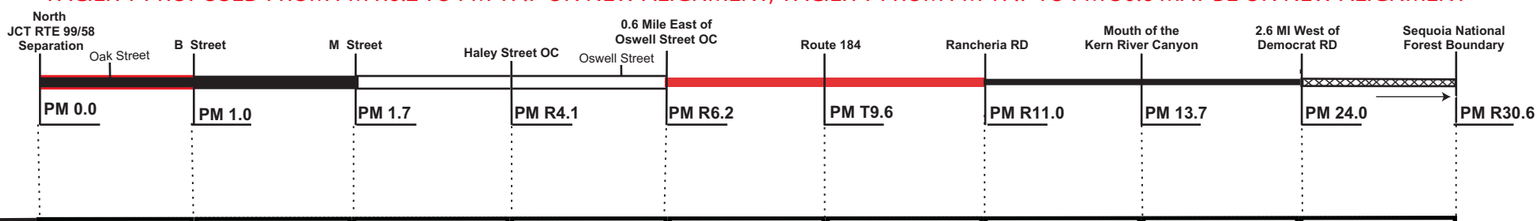
See the following 4 pages for the Summary Chart.

LEGEND

Existing Lanes
Passing Lane
Planned or Programmed by 2030
Convert existing conventional highway to freeway
All Through Lanes
Conventional
Expressway
Freeway
Number of Lanes: 2, 4, 6, 8

* Length of Segments on this bar chart are Not To Scale

FACILITY PROPOSED FROM PM R6.2 TO PM 17.7 ON NEW ALIGNMENT; FACILITY FROM PM 17.7 TO PM 30.6 MAY BE ON NEW ALIGNMENT



Segment: Is self-explanatory except for several data sets:

Rural/Urban: Indicates whether the segment is in a rural area or city limits.

Terrain: Shows the general highway grade: minimal grade = level; moderate grade = rolling; and severe grade = mountainous (MTNS).

ROW: Portrays Right-of-Way (ROW) and geometric data in feet and meters.

Shoulder Range: Is a range of treated surface (8'standard), both inside and outside shoulders.

Ultimate (UTC): Is the typical ROW needed for the ultimate facility, i.e., 8 lane freeway (8F) 218' is the standard typical UTC ROW - will be updated upon corridor plan lining by specific sections of highway.

Facility: Shows the Existing Facility, the desired facility type (2030 Concept) by 2030-RTPA's and Caltrans, and the Ultimate Facility to preserve ROW and plan line beyond 2030. It also shows whether a passing lane exists. 2C(I) indicates that the highway has been improved in select locations with operational or safety improvements. Examples are: passing lanes, channelization and traffic signals.

LOS: The current (2004) LOS (level of service), along with the expected calculated LOS in 2015 and 2030. The 2030 Concept is the target LOS desired, i.e., LOS C, for attainment by 2030 Caltrans.

Deficiency: Occurs when the target LOS is degraded, i.e., LOS D worse than LOS C, with the year of occurrence shown. It also shows whether a capacity improving project is in the STIP, and what the LOS would be with the 2030 Concept improvement.

Directional Split: Denotes the split in peak hour traffic flow on a directional basis (NB/SB or WB/EB) either in the morning (AM) or evening (PM).

AADT: Signifies Annual Average Daily Traffic.

Peak Hour: Indicates a representation of the maximum hour of traffic flow during the day.

% Trucks: Shows the percent of trucks for AADT and Peak Hour.

***** Deficient: no project planned.

****** Deficient: Concept facility does not meet Concept LOS.

*******2030 Route Concept: Extension of 4F is under discussion with Bakersfield; Concept not yet determined.

+ The Ultimate ROW is generally the same as the existing ROW except where geometric improvements may be required. The improvements will occur at specific locations.

++ No traffic growth from 2015 to 2030 due to Centennial Corridor.

N/A No project - Concept Facility meets Concept LOS/Not Applicable.

99P^ Median width 100 ft or greater with or without variance.

^^ 2-lane conventional highway improvements, i.e., turn lanes, signals, passing lanes.

SEGMENT	1	2	3	4	5	6	7	8	9
County / Route	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178
Description Begin	NORTH JCT RTE 99/58/178 SEP	B ST	M ST	HALEY ST OC	0.6 MI (0 .97 KM) E OF OSWELL ST OC	RTE 184	RANCHERIA RD	MOUTH OF KERN RIVER CANYON	2.6 MI (4.18 KM) W OF DEMOCRAT RD
Description End	B ST	M ST	HALEY ST OC	0.6 MI (0 .97 KM) E OF OSWELL ST OC	RTE 184	RANCHERIA RD	MOUTH OF KERN RIVER CANYON	2.6 MI (4.18 KM) W OF DEMOCRAT RD	SEQUOIA NATL FOREST BOUNDARY
Postmile Limits Begin/End	0.0 / 1.0	1.0 / 1.7	1.7 / R 4.1	R 4.1 / R 6.2	R 6.2 / T 9.6	T 9.6 / R 11.0	R 11.0 / 13.7	13.7 / 24.0	24.0 / R 30.6
Kilopost Limits Begin/End	0.0 KP / 1.6 KP	1.6 KP / 2.7 KP	2.7 KP / 6.6 KP	6.6 KP / 10.0 KP	10.0 KP / 15.4 KP	15.4 KP / 17.7 KP	17.7 KP / 22.0 KP	22.0 KP / 38.6 KP	38.6 KP / 49.2 KP
Length (MI/KM)	1.0 MI / 1.6 KM	0.7 MI / 1.1 KM	2.4 MI / 3.9 KM	2.1 MI / 3.4 KM	3.4 MI / 5.5 KM	1.4 MI / 2.3 KM	2.7 MI / 4.3 KM	10.3 MI / 16.6 KM	6.6 MI / 10.6 KM
Rural / Urban	URBAN	URBAN	URBAN	URBAN	URBAN	URBAN	RURAL	RURAL	RURAL
Terrain	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	ROLLING	MTNS	MTNS
ROW: Range Existing (FT)	83.0 / 140.0 FT	83.0 / 275.0 FT	83.0 / 300.0 FT	200.0 / 300.0 FT	80.0 / 250.0 FT	80.0 / 250.0 FT	80.0 / 100.0 FT	60.0 / 140.0 FT	132.0 / 132.0 FT
ROW: Range Existing (M)	25.3 / 42.7 M	25.3 / 83.8 M	25.3 / 91.4 M	61.0 / 91.4 M	24.4 / 76.2 M	24.4 / 76.2 M	24.4 / 30.5 M	18.3 / 42.7 M	40.2 / 40.2 M
Median Range (FT)	13 / 24 FT	99P^ / 99P^ FT	31 / 99P^ FT	46 / 70 FT	0 / 70 FT	0 / 0 FT	0 / 0 FT	0 / 0 FT	0 / 0 FT
Median Range (M)	4.0 / 7.3 M	30.2 / 30.2 M	9.4 / 30.2 M	14.0 / 21.3 M	0.0 / 21.3 M	0.0 / 0.0 M	0.0 / 0.0 M	0.0 / 0.0 M	0.0 / 0.0 M
Shoulder Range (FT)	2.0 / 12.0 FT	8.0 / 12.0 FT	2.0 / 9.0 FT	2.0 / 10.0 FT	3.0 / 10.0 FT	8.0 / 8.0 FT	4.0 / 8.0 FT	2.0 / 2.0 FT	5.0 / 8.0 FT
Shoulder Range (M)	0.6 / 3.7 M	2.4 / 3.7 M	0.6 / 2.7 M	0.6 / 3.0 M	0.9 / 3.0 M	2.4 / 2.4 M	1.2 / 2.4 M	0.6 / 0.6 M	1.5 / 2.4 M
Lane Width (FT/M)	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M	11.0 FT / 3.4 M	12.0 FT / 3.7 M
Ultimate ROW (FT/M)	+ FT / M	+ FT / M	218 FT / 66.4 M	218 FT / 66.4 M	250 FT / 76.2 M	250 FT / 76.2 M	250 FT / 76.2 M	170 FT / 51.8 M	+ FT / M
Facility: Existing	4C	6C	6F	6F	2C	2C	2C	2C	4E
2030 Concept	6C	6C	6F	6F	4F	4F	2C(I)***	2C(I)^^	4E
UTC	6C	6C	8F	8F	6F	6F	6F	4E	4E
LOS: 2004	F	F	C	C	F	F	C	D	D
2015 / 2030	F / F	F / F	D / F	D / F	F / F	F / F	D / D	D / E	D / E
2030 Concept	D	D	D	D	D	D	C	C	C
Deficiency/Year Deficient	2004	2004	2030	2030	2004	2004	2015	2004	2004
Project in STIP/RTP (Y/N)	YES	NO	NO	NO	YES	YES	YES	YES	NO
LOS W/ Concept Improvement	F**	*	*	*	F**	C	*	*	*
Directional Split (Peak Hour)	57/43	57/43	57/43	60/40	60/40	60/40	75/25	75/25	75/25
AADT: 2004	56,000	62,000	64,000	57,000	21,000	5,000	4,300	4,600	4,900
2015 / 2030	61,600 / ++	68,200 / ++	89,600 / 140800	79,800 / 125400	37,400 / 75800	6,900 / 9400	6,400 / 9500	6,900 / 10100	7,300 / 10800
Peak Hour: 2004	5,500	6,070	6,200	5,580	1,970	920	600	640	690
2015 / 2030	6,100 / ++	6,680 / ++	8,680 / 13640	7,810 / 12280	3,510 / 7110	1,260 / 1720	890 / 1320	950 / 1410	1,030 / 1520
% Trucks: AADT / Peak Hour	4 / 9 %	4 / 9 %	4 / 9 %	5 / 9 %	5 / 8 %	7 / 8 %	7 / 13 %	7 / 13 %	7 / 13 %

LEGEND

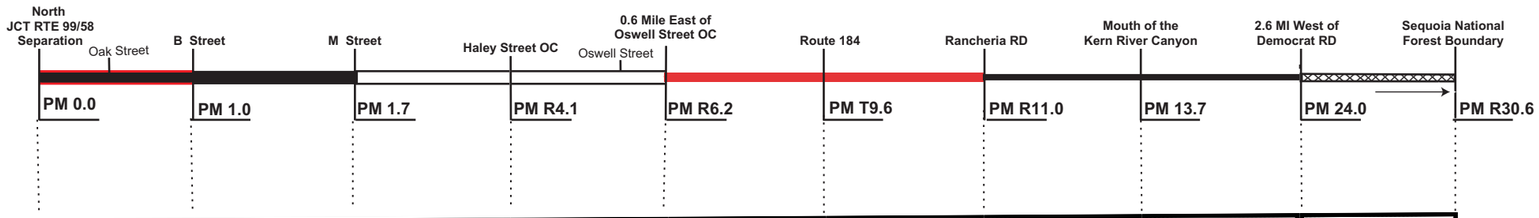
Existing Lanes
Passing Lane
Planned or Programmed by 2030
Convert existing conventional highway to freeway
All Through Lanes

Conventional
Expressway
Freeway

Number of Lanes: 2, 4, 6, 8

* Length of Segments on this bar chart are Not To Scale

FACILITY PROPOSED FROM PM R6.2 TO PM 17.7 ON NEW ALIGNMENT; FACILITY FROM PM 17.7 TO PM 30.6 MAY BE ON NEW ALIGNMENT



Segment: Is self-explanatory except for several data sets:

Functional Classification: A process by which streets and highways are grouped into or classification systems.

NHS (National Highway System): Included in the NHS is all interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.

Freeway/Expressway System: The Statewide system of highways declared to be essential to the future development of California.

Regionally Significant: Serves regional transportation needs including at a minimum all principal arterial highways and all fixed guideway transit facilities.

STRAHNET: A highway that provides defense access, continuity, and emergency capabilities for movements of personnel and equipment in both peace and war.

Lifeline: A route on the State highway system that is deemed so critical to emergency response/life-saving activities of a region or the state that it must remain open.

IRRS (Interregional Road System): A series of State highway routes, outside the urbanized areas, that provide access to the State's economic centers, major recreational areas, and urban and rural regions.

STAA (Surface Transportation Assistance Act): This act required states to allow larger trucks on the National Network. "Terminal Access" routes are State highways that can accomodate STAA trucks. Other designations i.e., California Legal offer more limited access.

Scenic: : A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers.

ICES (Intermodal Corridor of Economic Significance): Significant National Highway System Corridors that link intermodal facilities most directly, conveniently and efficiently to intrastate, interstate, and international markets.

Biological/Historical Resource Sensitivity: Indicates whether an endangered species of flora and/or fauna is present or a property of historical significance is in the area.

SEGMENT	1	2	3	4	5	6	7	8	9
County / Route	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178
Description Begin	NORTH JCT RTE 99/58/178 SEP	B ST	M ST	HALEY ST OC	0.6 MI (0 .97 KM) E OF OSWELL ST OC	RTE 184	RANCHERIA RD	MOUTH OF KERN RIVER CANYON	2.6 MI (4.18 KM) W OF DEMOCRAT RD
Description End	B ST	M ST	HALEY ST OC	0.6 MI (0 .97 KM) E OF OSWELL ST OC	RTE 184	RANCHERIA RD	MOUTH OF KERN RIVER CANYON	2.6 MI (4.18 KM) W OF DEMOCRAT RD	SEQUOIA NATL FOREST BOUNDARY
Postmile Limits Begin/End	0.0 / 1.0	1.0 / 1.7	1.7 / R 4.1	R 4.1 / R 6.2	R 6.2 / T 9.6	T 9.6 / R 11.0	R 11.0 / 13.7	13.7 / 24.0	24.0 / R 30.9
Kilopost Limits Begin/End	0.0 KP / 1.6 KP	1.6 KP / 2.7 KP	2.7 KP / 6.6 KP	6.6 KP / 10.0 KP	10.0 KP / 15.4 KP	15.4 KP / 17.7 KP	17.7 KP / 22.0 KP	22.0 KP / 38.6 KP	38.6 KP / 49.2 KP
Length (MI/KM)	1.0 MI / 1.6 KM	0.7 MI / 1.1 KM	2.4 MI / 3.9 KM	2.1 MI / 3.4 KM	3.4 MI / 5.5 KM	1.4 MI / 2.3 KM	2.7 MI / 4.3 KM	10.3 MI / 16.6 KM	6.6 MI / 10.6 KM
Functional Classification	Principal Arterial (extension of minor arterial-rural to urban)	Principal Arterial (extension of minor arterial-rural to urban)	Principal Arterial (extension of minor arterial-rural to urban)	Principal Arterial (extension of minor arterial-rural to urban)	Principal Arterial (extension of minor arterial-rural to urban)	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial
National Highway System (NHS) (Y/N)	NO	NO	NO	NO	NO	NO	NO	NO	NO
Freeway/Expressway System (Y/N)	YES	YES	YES	YES	YES	YES	YES	YES	YES
Regionally Significant (Y/N)	YES	YES	YES	YES	YES	YES	YES	YES	YES
STRAHNET (Y/N)	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lifeline (Y/N)	NO	NO	NO	NO	NO	NO	NO	NO	NO
IRRS (Yes: HE=High Emphasis, F=Focus, G=Gateway) or No	NO	NO	NO	NO	NO	NO	YES	YES	YES
TRUCK NETWORK: STAA (NN=National Network, TA=Terminal Access) or CL=California Legal, R=Special Restrictions; A=Advisory	TA	TA	TA	TA	TA	TA	TA	A	A
Scenic (Yes: OD=Officially Designated, E=Eligible) or No	NO	NO	NO	NO	NO	NO	NO	NO	NO
ICES (Intermodal Corridor of Economic Significance) (Y/N)	NO	NO	NO	NO	NO	NO	NO	NO	NO
General Plan/RTP LOS Standard	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System
General Plan/RTP Standard Highway Classification	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY	EXPRESSWAY	EXPRESSWAY	EXPRESSWAY	EXPRESSWAY
Bike Use Allowed (Y/N)	YES	YES	NO	NO	YES	YES	YES	YES	YES
Biological Resource Sensitivity (Y/N)	NO	NO	NO	NO	YES	YES	YES	YES	YES
Historical Resources Present (Y/N)	NO	NO	NO	NO	NO	NO	NO	NO	NO

State Route 178

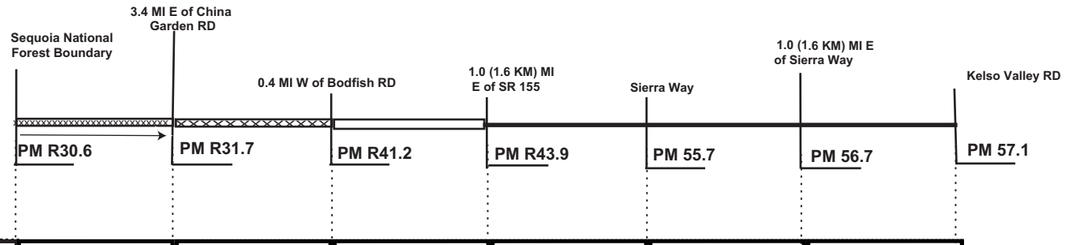
LEGEND

Existing Lanes
Passing Lane
Planned or Programmed by 2030
Convert existing conventional highway to freeway
All Through Lanes

Conventional
Expressway
Freeway

Number of Lanes: 2, 4, 6, 8

* Length of Segments on this bar chart are Not To Scale



Segment: Is self-explanatory except for several data sets:

Rural/Urban: Indicates whether the segment is in a rural area or city limits.

Terrain: Shows the general highway grade: minimal grade = level; moderate grade = rolling; and severe grade = mountainous (MTNS).

ROW: Portrays Right-of-Way (ROW) and geometric data in feet and meters.

Shoulder Range: Is a range of treated surface (8' standard), both inside and outside shoulders.

Ultimate (UTC): Is the typical ROW needed for the ultimate facility, i.e., 8 lane freeway (8F) 218' is the standard typical UTC ROW - will be updated upon corridor plan lining by specific sections of highway.

Facility: Shows the Existing Facility, the desired facility type (2030 Concept) by 2030-RTPA's and Caltrans, and the Ultimate Facility to preserve ROW and plan line beyond 2030. It also shows whether a passing lane exists. 2C(I) indicates that the highway has been improved in select locations with operational or safety improvements. Examples are: passing lanes, channelization and traffic signals.

LOS: The current (2004) LOS (level of service), along with the expected calculated LOS in 2015 and 2030. The 2030 Concept is the target LOS desired, i.e., LOS C, for attainment by 2030 Caltrans.

Deficiency: Occurs when the target LOS is degraded, i.e., LOS D worse than LOS C, with the year of occurrence shown. It also shows whether a capacity improving project is in the STIP, and what the LOS would be with the 2030 Concept improvement.

Directional Split: Denotes the split in peak hour traffic flow on a directional basis (NB/SB or WB/EB) either in the morning (AM) or evening (PM).

AADT: Signifies Annual Average Daily Traffic.

Peak Hour: Indicates a representation of the maximum hour of traffic flow during the day.

% Trucks: Shows the percent of trucks for AADT and Peak Hour.

***** Deficient: no project planned.

****** Deficient: Concept facility does not meet Concept LOS.

*******2030 Route Concept: Extension of 4F is under discussion with Bakersfield; Concept not yet determined.

+ The Ultimate ROW is generally the same as the existing ROW except where geometric improvements may be required. The improvements will occur at specific locations.

++ No traffic growth from 2015 to 2030 due to Centennial Corridor.

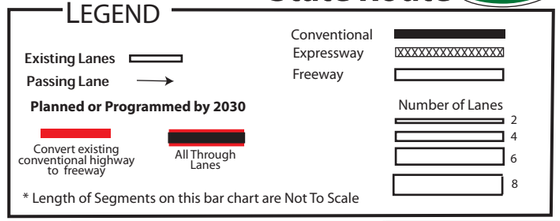
N/A No project - Concept Facility meets Concept LOS/Not Applicable..

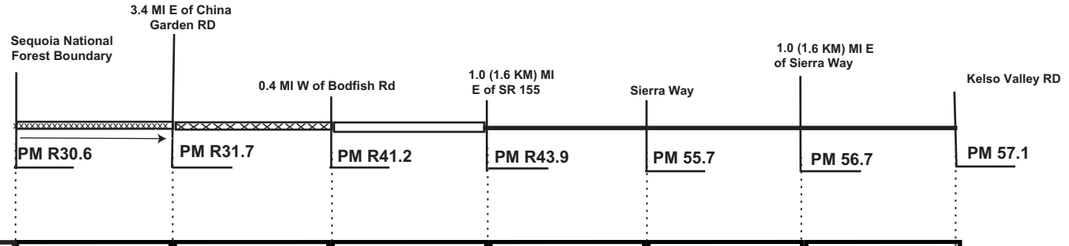
99P^ Median width 100 ft or greater with or without variance.

^^ 2-lane conventional highway improvements, i.e., turn lanes, signals, passing lanes.

SEGMENT	10	11	12	13	14	15
County / Route	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178
Description Begin	SEQUOIA NATL FOREST BOUNDARY	3.4 MI (5.44 KM) E OF CHINA GARDEN RD	0.4 (0.64 KM) MI W OF BODFISH RD	1.0 (1.6 KM) MI E OF SR 155	SIERRA WAY	1.0 (1.6 KM) MI E OF SIERRA WAY
Description End	3.4 MI (5.44 KM) E OF CHINA GARDEN RD	0.4 (0.64KM) MI W OF BODFISH RD	1.0 (1.6 KM) MI E OF SR 155	SIERRA WAY	1.0 (1.6 KM) MI E OF SIERRA WAY	KELSO VALLEY RD
Postmile Limits Begin/End	R 30.6 / R 31.7	R 31.7 / R 41.2	R 41.2 / R 43.9	R 43.9 / 55.7	55.7 / 56.7	56.7 / 57.1
Kilopost Limits Begin/End	49.2 KP / 51.0 KP	51.0 KP / 66.3 KP	66.3 KP / 70.6 KP	70.6 KP / 89.6 KP	89.6 KP / 91.2 KP	91.2 KP / 91.9 KP
Length (MI/KM)	1.1 MI / 1.8 KM	9.5 MI / 15.3 KM	2.7 MI / 4.3 KM	11.8 MI / 19.0 KM	1.0 MI / 1.6 KM	0.4 MI / 0.6 KM
Rural / Urban	RURAL	RURAL	RURAL	RURAL	RURAL	RURAL
Terrain	MTNS	MTNS	MTNS	ROLLING	ROLLING	ROLLING
ROW: Range Existing (FT)	240.0 / 240.0 FT	175.0 / 240.0 FT	160.0 / 200.0 FT	110.0 / 200.0 FT	170.0 / 170.0 FT	60.0 / 170.0 FT
ROW: Range Existing (M)	73.2 / 73.2 M	53.3 / 73.2 M	48.8 / 61.0 M	33.5 / 61.0 M	51.8 / 51.8 M	18.3 / 51.8 M
Median Range (FT)	0 / 4 FT	0 / 4 FT	4 / 46 FT	4 / 12 FT	0 / 0 FT	0 / 0 FT
Median Range (M)	0.0 / 1.2 M	0.0 / 1.2 M	1.2 / 14.0 M	1.2 / 3.7 M	0.0 / 0.0 M	0.0 / 0.0 M
Shoulder Range (FT)	5.0 / 8.0 FT	4.0 / 5.0 FT	5.0 / 10.0 FT	1.0 / 10.0 FT	4.0 / 4.0 FT	0.0 / 0.0 FT
Shoulder Range (M)	1.5 / 2.4 M	1.2 / 1.5 M	1.5 / 3.0 M	0.3 / 3.0 M	1.2 / 1.2 M	0.0 / 0.0 M
Lane Width (FT/M)	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M	12.0 FT / 3.7 M
Ultimate ROW (FT/M)	+ FT / M	+ FT / M	+ FT / M	+ FT / M	+ FT / M	+ FT / M
Facility: Existing	2E	4E	4F	2C	2C	2C
2030 Concept	2E	4E	4F	2C(I)^^	2C(I)^^	2C(I)^^
UTC	4E	4E	4F	2C(I)^^	2C(I)^^	2C(I)^^
LOS: 2004	D	B	B	D	D	C
2015 / 2030	E / E	B / B	B / B	E / E	E / E	D / D
2030 Concept	C	C	C	C	C	C
Deficiency/Year Deficient	2004	N/A	N/A	2004	2004	2015
Project in STIP/RTP (Y/N)	NO	NO	NO	NO	NO	NO
LOS W/ Concept Improvement	*	N/A	N/A	*	*	*
Directional Split (Peak Hour)	70/30	70/30	70/30	60/40	60/40	60/40
AADT: 2004	4,900	4,400	3,800	7,200	7,800	5,400
2015 / 2030	7,300 / 10800	6,600 / 9700	4,200 / 4900	7,900 / 9500	9,000 / 10800	6,500 / 9000
Peak Hour: 2004	690	430	350	1,220	1,400	650
2015 / 2030	1,030 / 1520	640 / 950	390 / 460	1,340 / 1610	1,620 / 1930	780 / 1080
% Trucks: AADT / Peak Hour	7 / 13 %	8 / 13 %	8 / 13 %	8 / 13 %	8 / 1 %	8 / 1 %

State Route 178





Segment: Is self-explanatory except for several data sets:

Functional Classification: A process by which streets and highways are grouped into or classification systems.

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Lifeline: A route on the State highway system that is deemed so critical to emergency response/life-saving activities of a region or the state that it must remain open.

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Biological/Historical Resource Sensitivity: Indicates whether an endangered species of flora and/or fauna is present or a property of historical significance is in the area.

SEGMENT	10	11	12	13	14	15
County / Route	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178	KERN / 178
Description Begin	SEQUOIA NATL FOREST BOUNDARY	3.4 MI (5.44 KM) E OF CHINA GARDEN RD	0.4 (0.64 KM) MI W OF BODFISH RD	1.0 (1.6 KM) MI E OF SR 155	SIERRA WAY	1.0 (1.6 KM) MI E OF SIERRA WAY
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Postmile Limits Begin/End	R 30.6 / R 31.7	R 31.7 / R 41.2	R 41.2 / R 43.9	R 43.9 / 55.7	55.7 / 56.7	56.7 / 57.1
Kilopost Limits Begin/End	49.2 KP / 51.0 KP	51.0 KP / 66.3 KP	66.3 KP / 70.6 KP	70.6 KP / 89.6 KP	89.6 KP / 91.2 KP	91.2 KP / 91.9 KP
Length (MI/KM)	1.1 MI / 1.8 KM	9.5 MI / 15.3 KM	2.7 MI / 4.3 KM	11.8 MI / 19.0 KM	1.0 MI / 1.6 KM	0.4 MI / 0.6 KM
Functional Classification	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial	Minor Arterial
National Highway System (NHS) (Y/N)	NO	NO	NO	NO	NO	NO
Freeway/Expressway System (Y/N)	YES	YES	YES	YES	YES	YES
Regionally Significant (Y/N)	YES	YES	YES	YES	YES	YES
STRAHNET (Y/N)	NO	NO	NO	NO	NO	NO
Lifeline (Y/N)	NO	NO	NO	NO	NO	NO
IRRS (Yes: HE=High Emphasis, F=Focus, G=Gateway) or No	YES	YES	YES	YES	YES	YES
TRUCK NETWORK: STAA (NN=National Network, TA=Terminal Access) or CL=California Legal, R=Special Restrictions; A=Advisory	CL	CL	CL	CL	CL	CL
Scenic (Yes: OD=Officially Designated, E=Eligible) or No	NO	NO	NO	NO	NO	NO
ICES (Intermodal Corridor of Economic Significance) (Y/N)	NO	NO	NO	NO	NO	NO
General Plan/RTP LOS Standard	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System	Kern Co LOS E for CMP & RTP Regionally Significant System
General Plan/RTP Standard Highway Classification	EXPRESSWAY	EXPRESSWAY	EXPRESSWAY	EXPRESSWAY	EXPRESSWAY	EXPRESSWAY
Bike Use Allowed (Y/N)	YES	YES	YES	YES	YES	YES
Biological Resource Sensitivity (Y/N)	NO	NO	NO	YES	YES	YES
Historical Resources Present (Y/N)	NO	NO	NO	NO	NO	NO

VII. A Review of Route 178 Performance: Current and Future

As of the year 2005, Route 178 is operating at a range of LO S A in the rural area to LOS F in the urban area of Bakersfield. Nine of the 15 segments are currently operating at a LOS D or F. By the years 2015 and 2030, the LOS will deteriorate on all segments due to the growth of urban, recreational, and holiday travel on Route 178.

Thirteen of 15 segments will operate at an LOS D, E or F by the year 2030. Planned RIP (Regional Improvement Program) capacity improvements will improve the LOS level on some segments.

Without improvements, the Route Concept LOS will not be met in the majority of the segments by the year 2030. Segments 1-6 show a LOS F without improvements. By the year 2030, Segments 7-9 without improvements show an LOS D or E.

Segments 10 and 13-15 will most likely be at an LOS D or E by the year 2030. Segments 11 and 12 will likely maintain an acceptable LOS without improvements by the year 2030.

Poor highway operating conditions may be prevalent in Bakersfield at the SR 178/99/58 Interchange. Two future construction proposals may help to alleviate traffic congestion at the SR 178/99/58 Interchange and Route 178 at Segments 1 and 2.

Construction of the new Centennial Freeway will reduce traffic projections on Route 178. However, various improvements on the route will still be needed to accommodate the growth in traffic.

The other construction project is a candidate project at Oak Street/Route 178. This project consists of construction of a new interchange and widening Route 178 to a 6-lane conventional highway between SR 99 and D Street. The improvement to 6 lanes will not attain the Concept LOS of D; it will be at LOS F. In downtown Bakersfield, historical preservation, ROW costs and restrictions will be a consideration for facility improvements.

A route adoption and environmental study are planned for Route 178, beginning at Route 184 and traversing on a new alignment to the northeast at Rancheria Road. This is Phase 1 of 2, and it is proposed to be a 4-lane freeway, on right-of-way encompassing Segments 5 and 6.

The new freeway will not meet the Concept LOS D at an expected LOS E from Oswell Street to Route 184, but it will meet the Concept needs at LOS C from Route 184 to Rancheria Road. Plans exist for a temporary connection on the new route from Rancheria Road back to the present route.

Discussions are in progress to extend the freeway beyond Rancheria Road and then to connect back to the present route (Segment 7). Please refer to the discussion on page 7 in regard to Segments 6-10 and Segment Map 6-10. The City of Bakersfield has proposed a specific plan line for the new Route 178. The specific plan line will include future proposals for interchanges on the old and new freeway alignment.

Future interchanges will be located at Morning Drive, Vineland Road, SR 184, and Rancheria Road. Vineland Road is a proposed new road connection to Route 178 between Morning Drive and Route 184.

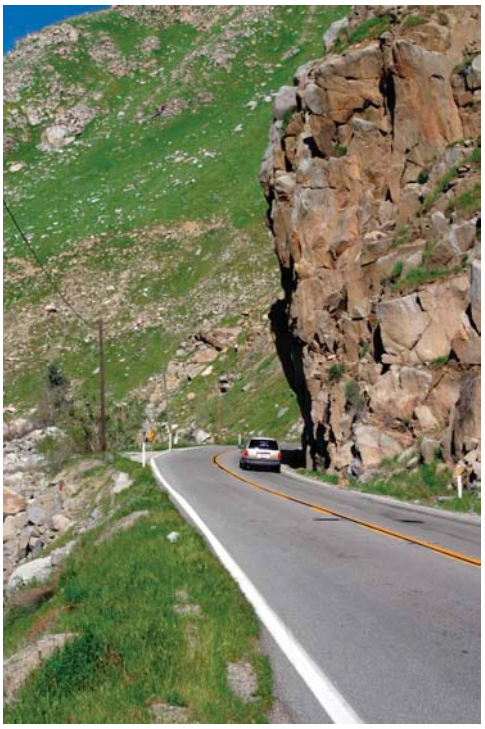
Caltrans is working on extending the Route 178 Freeway Agreement east to Masterson. Vineland will be the new north/south access route. ROW preservation is most important on the proposed corridor.

Residential development in the corridor and population increases will require transportation improvements in the near future.

In Phase 2, a decision and timeline on a new 4-lane expressway on new alignment, which proposes to traverse northerly around the Kern River Canyon to Lake Isabella, has not been resolved. It is expected to be an alternative for travel in the Canyon, but perhaps not within the 2030 time horizon.

Other operational problems exist from the mouth of the Kern River Canyon to the Sequoia National Forest. The highway travels through a geologically unstable area within the National Forest.

The Kern River Canyon Highway from approximately PM 13.7/30.6, KP 22.0/49.2 is narrow with little or no shoulders, many short radius curves, and a high degree of passing restrictions. The planned realignment of the route to the northeast of the present alignment will help to eliminate problems associated with travel in the Kern River Canyon area. Passing lanes and other safety improvements have been implemented in the Kern River Canyon.



Mountainous terrain along many segments on SR 178 make widening difficult.

In addition to the regular maintenance and periodic operations and safety improvements completed on Route 178 (State Highway Operations Protection Program or SHOPP projects), Caltrans will continue to work on ITS improvements, such as ramp metering, changeable message signs, highway advisory radio, and other strategies to more effectively sustain and improve traffic flow, particularly in the urbanized areas.

With the projected growth in statewide, interregional, and local commuter traffic, the congestion on Route 178 will continue to increase. Over the next 25 years and beyond, Caltrans and local agencies will continue to work on solving problems associated with the route.

New residential and commercial development in the urban and rural valley portion of the route will necessitate traffic congestion mitigation. Acquiring funding sources for Route 178 improvements will be a continuing challenge for all agencies. The Kern Council of Governments (Kern COG is the Metropolitan Planning Organization or MPO), City of Bakersfield, County of Kern, and local communities would need to determine how Route 178 should develop with available regional funding. Other than Regional Improvement Program funds, other funds such as local measure funds may be available for projects identified in the Regional Transportation Plan (RTP).

The Livable Communities and Context Sensitive Solutions concepts should be considered and possibly implemented in future design and construction of improvements to the Route 178

Corridor, particularly in the urban area. The execution of these concepts act to scale down the magnitude of its impact as well as increase the aesthetics of the system. Also, environmental justice should be considered in future development on Route 178. The environmental justice process will act to not overwhelm poor and minority communities in transportation planning.

In any case, Caltrans will need to continue emphasizing the further rehabilitation, operational, and capacity improvements of Route 178 due to its regional importance.

VIII. Planned and Programmed Improvements for Route 178

The following table show both the planned and programmed projects for Route 178 over the next 25 years. The planned projects include *candidate* projects for the STIP and SHOPP, or ITSP and RTP projects. The programmed projects include *actual* projects in the STIP, SHOPP that are partially or fully funded. STIP projects are primarily capacity-increasing, while SHOPP projects focus on maintenance, safety, and operational improvements.

The table shows:

1. The specific segment.
2. Route 178 Planned Projects-the listing document (RTP, ITSP, STIP Candidate, or SHOPP Candidate), description of the project, and known pertinent data.
3. Route 178 Programmed Projects-the listing document (STIP, SHOPP), description of the project, and projected begin and completed construction dates.

Project scope and technical data are for general informational purposes only. If current information is needed, please verify with the Caltrans District 6 Office of Advance Planning at (559) 445-5232		
Segment PM/KP From/To	**SR 178 Planned Projects**	**SR 178 Programmed Projects**
1 KERN PM 0.0/1.0 KP 0.0/1.6 RTE 99/58 SEP to B St	**STIP Candidate:** KER 178 PM 0.0/1.1, KP 0.0/1.8, Oak Street Operational Improvements: *Widen to 6-lanes and construct interchange at Oak Street (4C-6C) (Future)*	There are no projects currently programmed for this segment.
2 KERN PM 1.0-1.7 KP 1.6/2.7 B St to M St	There are no projects currently planned for this segment.	**2002 SHOPP:** KER 178 PM 1.6, KP 2.6 In Bakersfield at L Street: *Install signals and curb ramps* *Begin construction: 2003/2004* *Complete construction: 2004/2005*

Segment PM/KP From/To	SR 178 Planned Projects	SR 178 Programmed Projects
3 KERN PM 1.7/R4.1 KP R2.7/R6.6 M St to Haley St OC	**SHOPP Candidate:** KER 178 PM 1.8/6.1, KP 2.9/9.8 From 24th Street to 0.8 KM E of Oswell Rd: *AC overlay (Future)*	**2000 SHOPP:** KER 178 PM 1.7/R6.7, KP 2.7/10.8 In Kern County in and near Bakersfield from M St to 0.4 KM west of Fairfax Rd: *Irrigation and planting upgrade* *Begin construction: 2002/2003* *Complete construction: 2005/2006*
4 KERN PM R4.1/R6.2 KP R6.6/R10.0 Haley St OC to 0.6 MI (0.97KM) E of Oswell St OC	**SHOPP Candidate:** KER 178 PM 1.8/6.1, KP 2.9/9.8 From 24th Street to 0.8 KM E of Oswell Rd: *AC overlay (Future)* **STIP Candidate:** KER 178 PM R4.8/R9.5, KP R7.7/15.28, From MT Vernon to RTE 184 JCT, Vineland exit: Amend Freeway Agreement *(Future)*	**2000 STIP: :** KER 178 PM R 6.1/7.5, KP 9.8/12.1From 0.4 miles west of Oswell Street to 0.5 miles east of Fairfax Rd : *Construct 4-lane freeway and interchange at Fairfax* *Begin construction: 2006/2007* *Complete construction: 2008/2009* **2002 SHOPP:** KER 178 PM 1.7/6.7, KP 2.7/10.8 In Kern County in and near Bakersfield from M St to 0.4 KM west of Fairfax Rd: *Irrigation and planting upgrade* *Begin construction: 2002/2003* *Complete construction: 2005/2006*
5 KERN PM R6.2/T9.6 KP R10.0/T15.4 0.6 MI (0.97 KM) E of OSWELL St OC to RTE 184	**RTP, STIP Candidate:** KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: *Route Adoption and environmental study on new alignment: (Future)* **STIP:** KER 178 PM 6.1/7.5, KP 9.8/12.1 From 0.4 miles west of Oswell Street to 0.5 miles east of Fairfax Rd: *Construct 4-lane freeway and interchange at Fairfax: (Future)* **STIP Candidate:** KER 178 PM R4.8/R9.5, KP R7.7/15.28, From MT Vernon to RTE 184 JCT, Vineland exit: Amend Freeway Agreement *(Future)* **STIP Candidate:** KER 178 PM 7.2/8.2, KP 11.5/13.1 In the City of Bakersfield from 0.8 KM west to 0.8 KM east of Morning Drive: Construct new interchange at Morning Drive and extend 4-lane freeway(Future).	**2000 STIP:** KER 178 PM R6.1/R7.5, KP 9.8/12.1 In Bakersfield from 1.2 KM west to 1.2 KM east of Fairfax Rd: *Construct interchange* *Begin construction: 2006/2007* *Complete construction: 2008/2009* **2000 SHOPP:** KER 178 PM R6.3/R13.4, KP R10.1/R21.6 Near Bakersfield from 0.8 KM west of Fairfax Rd to mouth of the canyon: *AC overlay and widening* *Begin construction: 2006/2007* *Complete construction: 2008/2009* **2002 SHOPP:** KER 178 PM 1.7/6.7, KP 2.7/10.8 In Kern County in and near Bakersfield from M St to 0.4 KM west of Fairfax Rd: *Irrigation and planting upgrade* *Begin construction: 2002/2003* *Complete construction: 2005/2006*

Segment PM/KP From/To	SR 178 Planned Projects	SR 178 Programmed Projects
6 KERN PM T9.6/R11.0 KP T15.4/R17.7 RTE 184 to Rancheria Rd	**RTP, STIP Candidate:** KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: *Route Adoption and environmental study on new alignment (Future)*	**2002 SHOPP:** KER 178 PM R6.3/R13.4, KP R10.1/R21.6 Near Bakersfield from 0.8 KM west Fairfax Rd to mouth of the canyon: *AC overlay and widening* Begin construction *2006/2007* *Complete construction: 2008/2009*
7 KERN PM R11.0/13.7 KP R17.7/22.0 Rancheria Rd to Mouth of the Kern River Canyon	**RTP, STIP:** KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: *Route Adoption and environmental study on new alignment (Future)*	**2002 SHOPP:** KER 178 PM R6.3/R13.4, KP R10.1/R21.6 Near Bakersfield from 0.8 KM west Fairfax Rd to mouth of the canyon: *AC overlay and widening* *Begin construction: 2006/2007* *Complete construction: 2008/2009*
8 KERN PM 13.7/24.0 KP 22.0/38.6 Mouth of the Kern River Canyon to 2.6 MI (4.18 KM) W of Democrat Rd	**RTP, STIP Candidate:** KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: *Route Adoption and environmental study on new alignment (Future)*	There are no projects currently programmed in this segment
9 KERN PM 24.0/R30.6 KP 38.6/R49.2 2.6 MI (4.18 KM) W of Democrat Rd to Sequoia National Forest Boundary	**RTP, STIP Candidate:** KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: *Route Adoption and environmental study on new alignment (Future)*	There are no projects currently programmed in this segment
10 - 12 KERN PM R30.6/R31.7 KP49.2/51..0 Sequoia Natl Forest Boundary to R43.9 KP R66.3/R70.6 0.4 (0.64KM) MI W of Bodfish RD	There are no projects currently planned for Segments 10-12.	There are no projects currently programmed for Segments 10-12.

Segment PM/KP From/To	SR 178 Planned Projects	SR 178 Programmed Projects
13 KERN PM R43.9/55.7 KP R70.6/89.6 1.0 MI (1.6KM) E of SR 155 to Sierra Way	There are no projects currently planned for this segment.	**2002 SHOPP:** KER 178 PM R45.5/47.7, KP 73.2/76.7 "100 meters west of Lake Isabella Boulevard, " Launching area No. 16 intersection: *AC Overlay and widen to 32ft* *Begin construction: 2007/2008* *Complete construction: 2009/2010* **2006 SHOPP:** KER 178 PM 52.6/57, KP 84.6/91.7 Near Lake Isabella from Entrada Blvd to Kelso Valley Rd: *AC overlay and widen shoulders* *Begin construction: 2005/2006* *Complete construction: 2008/2009*
14 KERN PM 55.7/56.7 KP 89.6/91.2 Sierra Way to 1.0 MI (1.6 KM) E of Sierra Way	There are no projects currently planned for this segment.	**2006 SHOPP:** KER 178 PM 52.6/57, KP 84.6/91.7 Near Lake Isabella from Entrada Blvd to Kelso Valley Rd: *AC overlay and widen shoulders* *Begin construction: 2005/2006* *Complete construction: 2008/2009*
15 KERN PM 56.7/57.1 KP 91.2/91.9 1.0 MI (1.5) E of Sierra Way to Kelso Valley Rd	There are no projects currently planned for this segment.	**2006 SHOPP:** KER 178 PM 52.6/57, KP 84.6/91.7 Near Lake Isabella from Entrada Blvd to Kelso Valley Rd: *AC overlay and widen shoulders* *Begin construction: 2005/2006* *Complete construction: 2008/2009*

Please see the Appendix for References, Glossary, and additional information on Intelligent Information Services (ITS), Transit, and Bicycle Facilities.

Pages

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References

Local Jurisdictions

Kern Council of Governments (Kern COG)
1401 19th St, Suite 300
Bakersfield, CA 93301
(661) 861-2191

County of Kern
Roads Department
1115 Truxtun Avenue
Bakersfield, CA 93301
(661) 861-3140

Air Quality District:

San Joaquin Valley Air Pollution Control District
1990 E Gettysburg Ave
Fresno, CA 93726
(559) 230-6000

Air Basin: San Joaquin Valley

Air Basin Determination:

Severe non-attainment for ozone and serious for PM^{10}. Contact the Air District for more information.

Transit Services:

For inquiries on transit services, please contact the MPO or local agency (listed above) for more information or refer to the Transit Services sheet in the Appendix for an overview of various transit services.

Traffic Accident Data:

Caltrans District 6
Office of Traffic Investigations
(559) 488-4123

Sources of Information - Caltrans:

Traffic Congestion Relief Program, 2000
State Transportation Improvement Program (STIP), 2000, 2002, 2004, 2005
State Highway Operations and Protection Program (SHOPP), 2000, 2002, 2005, 2006
Interregional Improvement Track-Interregional Road System Plan (ITSP), 1998, 2000
Caltrans District 6 Bicycle Route Inventory for California State Highways (District 6 Edition), May 2004 Office of System Planning, (559) 444-2500

Sources of Information - By County:

Kern County:
Kern County General Plan, 2004
Kern County Regional Transportation Plan, 2004
Intelligent Transportation System Early Deployment Plan (Kern Region), 1997
Kern County Regional Bicycle Plan , 2001 Kern Council of Governments (Kern COG)
City of Bakersfield - General Plan 2004 Update - "Circulation Element"

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AADT: (Average Annual Daily Traffic). This designation indicates the total daily traffic that is counted at a particular location or within a particular highway segment and then averaged out over one calendar year.

Access Control (or Controlled Access): The condition where the ability to access a state highway by owners or occupants of abutting land is fully or partially controlled by public authority. Also, see Classification of Roads.

Bicycle Facilities: Bicycle facilities within the state are classified into four categories:

- **Class 1 Bikeways (Bike Paths):** Bike Paths are separate *off-highway* facilities for the exclusive use of bicyclists and with cross flow by motor vehicles minimized.
- **Class 2 Bikeways (Bike Lanes):** Bike Lanes are for preferential use by bicyclists and can be established within the paved area of state highways. Such facilities are approved by, and subsequently maintained by, local jurisdictions and/or Caltrans. Bike lanes are separated from traffic lanes on California highways by the use of a painted 6" stripe on the pavement and are designated as bike lanes by the use of white R81 (Bike Lane), R-81A (Begin) and R81-B (End) "regulatory" signs. (MUTCD Chapter 9 - California Supplement - 2004).
- **Class 3 Bikeways (Bike Routes):** Bike Route are shared facilities which serve either to (a) provide continuity to other bike facilities (usually a Class 1 or Class 2 bikeway); or (b) to designate a preferred route through a high demand corridor. Such facilities are approved by, and subsequently maintained by, local jurisdictions and/or Caltrans. Bike Routes are not separated from traffic lanes but are designated as bike routes through the use of green D11-1 (Bike Route), M4-11 (Begin) and M4-12 (End) "guide" signs. (MUTCD - Chapter 9 - 2003).
- **Shared Roadway (No Bikeway Designation):** Most bicycle travel on conventional state highways and local streets occurs on facilities without any bikeway designations, signs or striping. Virtually all highways in use by bicyclists for inter-city and recreational travel fall under this "share-the-road" scenario.

CMS: (Changeable Message Sign). A CMS is a full-matrix display sign used on State highways to provide motorists with an advanced warning of major highway incidents and route diversion information. CMSs are capable of displaying a variety of character heights and up to three lines of text. CMSs play increasingly important roles on State highways by improving operations and safety.

Classification of Roads:

- **Conventional (C):** A highway without access control, which may or may not be divided. Grade separations at intersections or access control may be used when justified at spot locations. Example: 2C = 2 lane conventional highway.
- **Expressway (E):** An arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections. Example: 4E = 4 lane expressway (note: 2 lane expressways are not common).
- **Freeway (F):** A highway to which the owners of abutting lands have no right or easement of access to or from their abutting lands. Access is controlled or restricted to interchanges and with grade separation at all intersections. Example: 6F = 6 lane freeway.
- **Functional Classification:** Guided by Federal legislation, functional classification refers to a process by which streets and highways are grouped into classes or systems, according to the character of the service that is provided, e.g., Principal Arterial, Minor Arterial, Collector, Local, etc.

Contract Phasing:

- **Begin Construction:** This is the phase when the contract for construction is approved and construction begins.
- **Complete Construction:** This is the phase when the completion of the construction contract occurs.

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COG: See RTPA

CTC: (California Transportation Commission). The California Transportation Commission (CTC) was established in 1978 by Assembly Bill 402 (Chapter 1106, Statutes of 1977) out of a growing concern for a single, unified California transportation policy. The Commission is responsible for the programming and allocating of funds for the construction of highway, passenger rail and transit improvements throughout California. The Commission also advises and assists the Secretary of Business, Transportation and Housing Agency and the Legislature in formulating and evaluating state policies and plans for California's transportation programs. The Commission is also an active participant in the initiation and development of State and Federal legislation that seeks to secure financial stability for the State's transportation needs.

Density: The number of vehicles occupying a given length of lane or roadway averaged over time, usually expressed as vehicles per mile or vehicles per mile per lane. Also see **V/C.**

Facility:
- **Concept Facility:** A highway facility type and characteristic considered viable without improvement within the 25 year planning period given financial, environmental, planning and engineering factors.
- **Present Facility:** Highway type and general characteristics in place at the time of the development of a TCR.

FTIP: See Project Programming

ICES: (Intermodal Corridor of Economic Significance). Significant National Highway System Corridors that link intermodal facilities most directly, conveniently and efficiently to intrastate, interstate, and international markets.

ITMS: (Intermodal Transportation Management System). A performance-based decision support system operating on a personal computer which allows "alternatives analysis" through the use of performance measures. ITMS incorporates intermodal system elements for freight and person movements using a spatial and attribute database thereby allowing management of transportation systems under existing and forecasted conditions. ITMS provides a new intermodal-planning tool using a common statewide data set for state and local transportation planners.

ITS: (Intelligent Transportation Systems). ITS refers to a wide variety of tools and techniques that focus on addressing transportation problems by improving the efficiency and safety of the existing transportation infrastructure. ITS works through the integration of high tech computing and information sharing.

ITSP: (Interregional Transportation Strategic Plan). The ITSP is a single document prepared by Caltrans to consolidate and communicate key elements of its ongoing long and short range planning. The ITSP serves as a counterpart to the Regional Transportation Plans (RTPs) prepared by the 43 Regional Transportation Planning Agencies (RTPAs) in California.

KP: (Kilo Post) See Post Mile

Lifeline Routes: See Route Designations

LOS: (Level of Service). Level of Service describes operating conditions a typical driver will experience on a typical day while driving on a particular facility. Like a report card, the LOS is defined in categories ranging from A-F. "A" represents the best traffic flow (low **v/c** ratio and delay, no impediments) through "F" representing the worse congestion (extremely high **v/c** ratio and delay, gridlock conditions).

MIS: (Major Investment Study). When the need for a major metropolitan transportation investment is identified and Federal funds are potentially involved, a major investment (corridor or sub-area) study is undertaken to develop or refine the plan. Upon completion, the MIS aids the area's Metropolitan Planning Organization (MPO), in cooperation with any participating agencies, on the design concept and scope of the investment.

MPO: See RTPA

Multi-Modal: Pertaining to the use of more than one mode of travel such as private vehicles, taxis, bicycles, mass-transit, para-transit, light and heavy rail, ferries, airplanes etc.

NHS: See Route Designation

NTN: See Route Designation

Non-attainment (pertaining to air quality): Identifies non-attainment status for CO (carbon monoxide), Ozone, and PM (particulate matter) within the subject air basin.

Overcrossing: (O/C) See Structures, Types of

PM: (MilePost Marker, Postmile or KP (Kilo Post). An 8" x 48" metal post marker along a State highway indicating a location using the postmile or designation. This is the distance in miles (or kilometers, in the case of Kilo Post measurements) that the given location is from the county line measuring from the south to the north or from the west to the east. Postmiles ascend in the northerly and easterly directions as determined by the route. The PM marker also includes an abbreviation for the County wherein its located (i.e., in Caltrans District 6: FRE = Fresno, KER = Kern, KIN = Kings, TUL = Tulare, MAD = Madera). As such, a PM marker located along SR 99 and displaying "MAD" and "6.25" would indicate that you are currently located in Madera County at a point 6.25 miles north of the Fresno/Madera County Line.

PROJECT PROGRAMMING: Separate programming documents prepared and adopted for somewhat different purposes, are required under State and Federal law. Transportation programming is the public decision making process that sets priorities and funds projects envisioned in long range transportation plans. It commits expected revenues over a multi-year period to transportation projects. Programming schedules high priority capital outlay projects for development and implementation. Programming documents include Federal, State, Regional and Metropolitan Transportation Plans, e.g., FTIP, ITIP, RTIP, SHOPP, STIP.

- **FTIP:** (Federal Transportation Improvement Program). To apply for federal highway funding a Federal statute requires MPOs to complete a Transportation Improvement Program. The MPO prepares the FTIP in cooperation with its member agencies (cities), its transit operators, State and Federal agencies, and with public involvement. The FTIP must by law be financially constrained and include a financial plan that demonstrates how projects can be implemented while the existing transportation system is being adequately operated and maintained. The FTIPs are in actuality a listing of planned Federally funded capital improvements to the regions' transit systems along with associated Federal operating assistance program and Federal Statewide Transportation Improvement Program (FSTIP).

- **ITIP:** (Interregional Transportation Improvement Program). The ITIP is Caltrans' equivalent to the RTIP (Regional Transportation Improvement Program) and consists of STIP projects funded from the Interregional Program share, which is 25% of new STIP funding. Caltrans' ITIP may nominate projects to the STIP only for the Interregional Program. The ITIP should be based on a Strategic Plan for implementing the Interregional Program. The ITIP should describe how proposed projects relate to the Strategic Plan and how the Strategic Plan would implement the California Transportation Commission's objectives. The ITIP includes both State highway and rail projects (potentially including mass transit guideway and grade separation projects).

- **PSR:** (Project Study Report). A pre-programming document required for project inclusion in the STIP.

- **PSSR:** (Project Scope Summary Report). An engineering report used to select candidate projects to be programmed in the State Highway Operation Protection Program (SHOPP). SHOPP funds are used primarily for rehabilitation, resurfacing and safety projects on State highways.

- **RTIP:** (Regional Transportation Improvement Program). After consulting with Caltrans, each Regional Transportation Planning Agency (RTPA) and/or County Transportation Commission (CTC) must prepare and submit an RTIP for regions with urbanized areas. Some urbanized RTPAs coincide with the Federal Metropolitan Planning Organizations (MPOs). Each regional agency is required to adopt and submit its RTIP to the CTC and to Caltrans. The CTC will utilize the RTIP to consider projects to be included in the State Transportation Improvement Program (STIP). The funds are available for a broad array of transportation improvement projects, including improving State highways, local roads, public transit, inter-city rail, pedestrian and bicycle facilities, grade separations, transportation system management, transportation demand management, soundwalls, etc.

- **SHOPP:** (State Highway Operation Protection Program). The SHOPP is a four-year program limited to projects related to State highway safety and rehabilitation. SHOPP funds are for major transportation capital improvements that are necessary to preserve and protect the State highway system. The SHOPP does not include projects that increase capacity. Most of the projects are for pavement rehabilitation, bridge rehabilitation, and traffic safety improvements. Other projects may include such things as operational improvements (e.g., traffic signalization) and roadside rest areas. Caltrans alone has full control of SHOPP funds.

- **STIP:** (State Transportation Improvement Program). Under California law, the STIP and SHOPP (State Highway Operations Protection Program) are the two primary documents through which the CTC commits and allocates funds to particular projects. In the year 2000 and thereafter, the STIP will be a four year plan with updates every two years. The STIP is a capital improvement program of transportation projects funded with revenues from the State Highway Account and other sources on and off the State highway system. The STIP includes a list of transportation projects, proposed in two broad programs, the regional program funded with 75% of new STIP funding and the interregional program funded from 25%. The STIP has two main funding components: the RIP (Regional Improvement Program), prepared by RTPAs and the IIP (Interregional Improvement Program) prepared by Caltrans.

ROW: (Right-of-Way). Denotes the *total* width allocated for a highway, including shoulders and adjacent land.

RCR: See TCR

Route Designations: Identifies whether or not the subject segment of a route is designated as being part of a system. Examples of systems include Freeway/Expressway System, Highways of Regional Significance, Interregional Highway System (IRRS), National Highway System (NHS), National Truck Network (NTN), and Terminal Access Route for the National Truck Network, Scenic Highway, or Strategic Highway Network (STRAHNET).

- **Freeway/Expressway System:** The Statewide system of highways declared by the Legislature to be essential to the future development of California. The F&E System has been constructed with a large investment of funds for the ability of control access, in order to ensure the safety and operational integrity of the highways.

- **IRRS:** (Interregional Road System) Caltrans developed an Interregional Road System Plan that identified projects which will provide the most adequate interregional road system to all economic centers in the State. IRRS is a series of Interregional State highway routes, outside the urbanized areas, that provide access to, and links between, the State's economic centers, major recreational areas, and urban and rural regions. Due to the high number of routes and capacity improvements needed on the IRRS, the most critical IRRS routes were identified as *High Emphasis Routes*. High Emphasis Routes are a priority for programming and construction and are critically important to interregional travel and the State as a whole. *Focus Routes* are a subset of the High Emphasis Routes. These routes represent 10 IRRS corridors that should be of the highest priority for completion to minimum facility standard in the 20 year period.

- **Lifeline Routes:** (Earthquake Emergency Response) A Lifeline Route is a route on the State highway system that is deemed so critical to emergency response/life-saving activities of a region or the state that it must remain open immediately following a major earthquake, or for which pre-planning for detour and/or expeditious repair and reopening can guarantee through-movement. The focus is on highly critical routes that allow for the immediate movement of emergency equipment and supplies into a region or through a region.

- **NHS:** (National Highway System) The purpose of the NHS is to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities and other intermodal transportation facilities. Additionally, such highways meet National defense requirements and serve to facilitate interstate and interregional travel. The NHS consists of 155,000 miles, (plus or minus 15 percent), of the major roads in the U.S. Included in the NHS are all interstate routes, a large percentage of urban and rural principal arterial, the defense strategic highway network, and strategic highway connectors.

- **NTN:** (National Truck Network) A list of truck route segments and their truck access designations (such as National Network (NN), Terminal Access, California Legal, Advisory, or Restricted) with each segment's beginning and ending post miles, and beginning and ending cross streets.

- **Regionally Significant:** A transportation corridor that serves regional transportation needs and would normally be included in the modeling of a metropolitan area's transportation network. Such corridors, at minimum, would include all principal arterial highways and all fixed guideway transit facilities located within the region.

- **Scenic Highway:** A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in Section 263 of the Streets and Highways Code. For a highway to be considered *Officially Designated* the local jurisdiction is required to develop and adopt protection measures in the form of ordinances to apply to the area of land within the scenic corridor. Additions and deletions to the list of highways eligible for scenic designation can only be made through legislative action.

- **STAA Truck:** In 1982, the Federal government passed the Surface Transportation Assistance Act (STAA). This act requires states to allow certain longer trucks on a network of Federal highways, referred to as the National Network (NN). A STAA truck is, in many cases, longer than a "California legal" truck, and may operate only on specific highways in California.

- **STRAHNET:** (Strategic Highway Corridor Network) STRAHNET is a National system of public highways that are key elements in U.S. strategic policy. This network provides defense access, continuity, and emergency capabilities for movements of personnel and equipment during both peace time and war. STRAHNET is comprised of about 61,000 miles of highway, including

the 45,400-mile system of Interstate and Defense Highways and 15,600 miles of other important public highways. STRAHNET "connectors" (about 1,700 miles) are additional highway routes linking over 200 important military installations and ports to the STRAHNET. Generally, these "connector" routes end at the port boundary or installation gate and are typically used only when moving personnel and equipment during a mobilization or deployment

- **Terminal Access Route:** Terminal Access (TA) routes are portions of State or local highways that Caltrans or a local government granted access to STAA trucks. The purpose of TA routes is to allow STAA trucks (1) to travel between NN routes, (2) to reach a truck's operating facility, or (3) to reach a facility where freight originates, terminates, or is handled in the transportation process.

RTIP: See Project Programming

RTP: (Regional Transportation Plan) The RTP is a comprehensive 20 year plan for the region, updated every four years by the regional transportation planning agency (RTPA). The RTP includes goals, objectives, and policies and recommends specific transportation improvements.

RTPA: (Regional Transportation Planning Agency) The RTPA is an association of city and county governments created to address regional transportation issues while protecting the integrity and autonomy of each jurisdiction. The RTPA serves as the forum for cooperative decision making by principal elected officials of general local government and is responsible for the preparation and adoption of a Regional Transportation Improvement Program (RTIP). There are 43 RTPAs in California. In smaller counties, usually the County Transportation Commission; in urban counties, usually the Metropolitan Planning Organization (MPO) is the RTPA. RTPAs produce the RTIPs for the approval of the California Transportation Commission (CTC).

- **MPOs and COGs:** RTPAs can be an MPO (Metropolitan Planning Organization) or a COG (Council of Governments) or all three. Some COGs also serve as MPOs, under Federal transportation rules, and this designation carries considerable power in allocating Federal and State funds for transportation projects. For example, Fresno COG is the MPO for Fresno County.

  According to U.S. Code, an MPO is the organization designated by the governor and local elected officials as responsible, together with the State, for preparing a comprehensive transportation plan for both highway and transit modes, with long range (10 – 20 years) and shorter range (five year) elements in an urbanized area (population 50,000 or greater). The major role of the MPO is to foster inter-governmental communications and cooperation, undertake comprehensive regional planning with an emphasis on transportation, provide for citizen involvement in the planning process and provide technical services to the member agencies. MPOs are created by elected officials of counties and their incorporated cities as a means of providing a cooperative body for the discussion and resolution of issues that go beyond their individual boundaries.

  State and Federal laws encourage such efforts. In each of these areas, MPOs act as a consensus-builder to develop an acceptable approach on how to handle problems that do not recognize jurisdictional boundaries.

Route Numbering: South-north state and interstate routes normally carry odd number designations (e.g. I-5, SR 43, SR 99 etc.) while west-east routes normally carry even number designations (e.g. I-10, SR 58, SR 168 etc.).

R/U: (Rural *or* Urban location) Areas designated as rural are those lying outside the U.S. Census urban area boundary with a population less than 2,500 (less than 5,000 population for Federal Aid highway purposes). Areas designated as urban are those lying inside the U.S. Census urbanized boundary.

Scenic Highway: See Route Designation

Separation: See Structures, Types of

SHOPP: See Project Programming

SR: (State Route) Highways within the State which are distinctively designed to serve intrastate and interstate travel.

STAA: See Route Designation

STIP: See Project Programming

STRAHNET: See Route Designation

STRUCTURES, Types of

- **Overcrossing:** (O/C) A configuration where the State highway crosses below the grade of a local road**.**
- **Separation:** (Sep) A configuration where a State highway crosses over a State highway.
- **Undercrossing:** (U/C) A configuration where a State highway crosses above the grade of a local road.
- **Underpass:** A configuration where the State highway crosses below the grade of a railroad line**.**

TCR: (Transportation Concept Report) Formerly called a Route Concept Report or RCR, this document analyzes a transportation corridor service area, establishes a 20 year transportation planning concept, and identifies modal transportation options and applications needed to achieve the 20 year concepts.

TCRP: (Traffic Congestion Relief Program) The TCRP was enacted as part of AB 2928 (2000). Through the TCRP, the Governor and Legislature allocated $4.9 billion for projects to relieve congestion, provide safe and efficient movement of goods, improve intermodal connectivity, and make further investments in transit and rail facilities within the State.

Undercrossing: See Structures, Types of

Underpass: See Structures, Types of

UTC: (Ultimate Transportation Corridor) Highest predictable build-out beyond 20 years.

V/C: (Volume/Capacity ratio) A ratio of demand flow rate (volume) to capacity for a traffic facility. Also see Density.

SR 178
Intelligent Transportation Systems*

Traffic Monitoring Stations/Ramp Metering Locations
Closed Circuit Television Locations (CCTV)/Changeable Message Sign (CMS) Locations

Traffic Monitoring Stations

Existing and Proposed
Status April 2004

EXISTING TRAFFIC MONITORING STATIONS					
Element Type	County	Route	Post Mile	Location	Status
D6TMS		178			None
PROPOSED TRAFFIC MONITORING STATIONS					
Element Type	County	Route	Post Mile	Location	Status
D6TMS	KER	178	01.50	CHESTER AVE	Proposed
D6TMS	KER	178	02.22	AT SR 204	Proposed

Ramp Metering Locations

Existing and Proposed
Status December 2003

EXISTING RAMP METERS					
Element Type	County	Route	Post Mile	Location	Status
D6RMS	KER	178			None Proposed
PROPOSED RAMP METERS					
Element Type	County	Route	Post Mile	Location	Status
D6RMS	KER	178			None Proposed

***Note:** The 511 system is a new three-digit phone number program to access travel information that is currently being implemented throughout various areas of the country. Caltrans' Reverse Commute Study/Special Studies Branch is working with Traffic Operations and Caltrans' Districts to develop a "California 511 Strategic Development Plan for Rural and Inter-Regional Traveler Information System" to meet the traveler's highway and transit information needs. When fully implemented, 511 will be an easy to remember telephone number.

Closed Circuit Television Locations

Existing and Proposed
Status April 2004

EXISTING CCTVs					
Element Type	County	Route	Post Mile	Location	Status
D6CCTV		178			None Proposed
PROPOSED CCTVs					
Element Type	County	Route	Post Mile	Location	Status
D6CCTV		178			None Proposed

Changeable Message Sign Locations

Existing and Proposed
Status April 2004

EXISTING CHANGEABLE MESSAGE SIGNS					
Element Type	County	Route	Post Mile	Location	Status
D6CMS	KER	WB 178	03.80	AT HEIGHT STREET	Existing
D6CMS	KER	EB 178	09.80	BOTTOM OF KERN CANYON	Existing
D6CMS	KER	WB 178	41.70	TOP OF KERN CANYON	Existing
PROPOSED CHANGEABLE MESSAGE SIGNS					
Element Type	County	Route	Post Mile	Location	Status
D6CMS	KER	EB 178	02.00	WEST OF SR 184	Proposed

Highway Advisory Radios

Existing and Proposed
Status April 2004

EXISTING HIGHWAY ADVISORY RADIOS					
Element Type	County	Route	Post Mile	Location	Status
D6HAR	KER	178			None
PROPOSED HIGHWAY ADVISORY RADIOS					
Element Type	County	Route	Post Mile	Location	Status
D6HAR	KER	178	13.50	BOTTOM OF KERN CANYON	Proposed

Weather Stations

Proposed
Status April 2004

PROPOSED WEATHER STATIONS					
Element Type	County	Route	Post Mile	Location	Status
WS	KER	178	09.80	Just East Of SR 184	Proposed
WS	KER	178	83.88	AT BODFISH	Proposed

SR 178
Transit Services
April 2005

Segment PM From/To	Transit Services
1–6 KERN PM 0.0 / R11.0 NORTH JCT RTE 99/58 SEP to Rancheria Rd	Common Transit Carriers serving Kern County include Greyhound Bus Lines, Orange Belt Stages, Airport Bus of Bakersfield, and the Amtrak bus. Golden Empire Transit (GET) serves the City of Bakersfield while the Kern Regional Transit services the rural areas of Kern County. Both operate fixed route and dial-a-ride services. Kern Regional Transit operates along this corridor from downtown Bakersfield to the Lake Isabella area.
7–15 KERN PM R11.0 / 57.1 Rancheria Rd to Near Weldon	Kern Regional Transit operates along this corridor from Bakersfield to Lake Isabella. The Kern River Valley System offers fixed route and Dial-a-Ride services within the communities of Lake Isabella, Onyx and Kernville.

SR 178
Bicycle Facilities
April 2005

Segment PM From / To	Bicycle Routes and Facilities
1-2 KERN PM 0.0 / 1.7 RTE 99 / 58 SEP To M St	Conventional 4-lane roadway segments - <u>open to bicycle travel</u>. Level terrain. *Shoulder width varies between 6-8 feet*. Numerous alternate routes also exist for these segments.** <u>Designation:</u> Neither of these two segments are identified within either the 2001 Kern County Regional Bike Plan or the City of Bakersfield's General Plan 2004 Updated Circulation Element as a Class I, II or III bikeway or proposed Class I, II or III bikeway.
3-4 KERN PM 1.7 / R6.2 M St To 0.6 Mi E of Oswell St OC	Freeway segments - <u>closed to bicycle travel</u>. Level terrain. *Shoulder width 8' but closed to bicycle travel*. Numerous alternate routes available for these two segments.** <u>Designation:</u> None of these segments are identified within either the 2001 Kern County Regional Bike Plan or the City of Bakersfield's General Plan 2004 Updated Circulation Element as a Class I, II or III bikeway or proposed bikeway.
5 KERN PM R6.2 / T9.6 0.6 Mi E of Oswell St OC / SR 184	Freeway segment from R6.2 to Fairfax Ave. - <u>closed to bicycle travel</u>. Fairfax Ave. to SR 184 conventional 2-4 lanes - <u>open to bicycle travel</u>. Level terrain. *Shoulder width 6'*. Alternate routes available from R6.2 to Fairfax Rd. No alternate route is currently available between Fairfax Rd. to SR 184.** <u>Designation:</u> R6.2 to Fairfax Rd. not identified within either the 2001 Kern County Regional Bike Plan or the City of Bakersfield's General Plan 2004 Updated Circulation Element, as existing or proposed Class I, II or III bikeway. Fairfax Rd. to SR 184 is identified as a future Class II facility in both plans.

6 KERN PM T9.6 / R11.0 SR 184 / Rancheria Rd	Conventional 2-lane roadway segment - open to bicycle travel. Level to steep terrain. *No paved shoulder*. No alternate route currently exists for this segment.** Designation: This segment is identified within the City of Bakersfield's General Plan 2004 Updated Circulation Element, as a planned Class II bikeway.
7 KERN PM R11.0 / 13.7 Rancheria Rd / Mouth of Kern River Canyon	Conventional 2-lane roadway segment - open to bicycle travel. Level terrain. *Shoulder width varies from no paved shoulder to 8.'* No alternate route currently exists for this segment.** Designation: This segment is identified within the City of Bakersfield's General Plan 2004 Updated Circulation Element, as a planned Class II bikeway.
8-9 KERN PM 13.7 / R30.6 Mouth of Kern River Canyon/ Sequoia Natl. Forest boundary	Conventional 2-lane roadway segments - open to bicycle travel. Moderately steep grade. ***Very narrow roadway***. *No paved shoulder. Bicycle travel not recommended*. Very scenic. No alternate route currently exists for these two segments.** Designation: No portion of these segments are currently identified within the 2001 Kern County Regional Bike Plan as a Class I, II or III bikeway or proposed Class I, II, or III bikeway.
10-11 KERN PM R30.6 / R41.2 Sequoia Natl. Forest boundary / 0.4 mi W of Bodfish Rd.	Conventional 4-lane divided roadway segments - open to bicycle travel. Level to moderately steep undulating terrain. *Shoulder varies from 3' to 6'*. Very scenic. No acceptable alternate route currently exists for these segments.** Designation: No portion of these segments are currently identified within the 2001 Kern County Regional Bike Plan as a Class I, II or III bikeway or proposed Class I, II or III bikeway.
12 KERN PM R41.1 / R43.9 0.4 Mi W of Bodfish Rd / 1.0 Mi E of SR 155	Freeway segments - open to bicycle travel. Level terrain. *Shoulder width 8'*. An alternate route is currently available.** Designation: No portion of this segment is currently identified within the 2001 Kern County Regional Bike Plan as a Class I, II or III bikeway or a proposed Class I, II or III bikeway.
13-15 KERN PM R43.9 to 57.1 1.0 Mi E of SR 155 / Kelso Valley Rd (End District 6)	Conventional 2-lane roadway segments - open to bicycle travel. Level to moderately steep undulating terrain. *Shoulder varies from 0' to 8'*. Scenic. No acceptable alternate route currently exists within these two segments.** Designation: No portion of these segments are currently identified within the 2001 Kern County Regional Bike Plan as a Class I, II or III bikeway or proposed Class I, II or III bikeway.

Future plans call for upgrading numerous segments of this highway. When these planned upgrades are in place shoulders of 6-10 feet, and in some places sidewalks, will be installed which will greatly add to the safety of bicyclists and pedestrians desiring to use this highway's open segments.

**** Streets and Highway Code - Section 888** - "The department (i.e. Caltrans) shall not construct a state highway as a freeway that will result in the severance or destruction of an existing major route for non-motorized transportation traffic and light motorcycles, unless it provides a reasonable, safe, and convenient alternate route, or unless such a route already exists."